

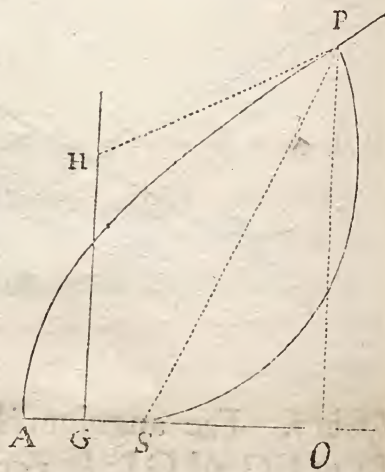
S E C T. VI.

De inventione motuum in Orbibus datis.

Prop. XXX. Prob. XXII.

Corporis in data Trajectoria Parabolica moventis, invenire locum ad tempus assignatum.

Sit S umbilicus & A vertex principalis Parabolæ, fitq; $4ASxM$ area Parabolica APS, quæ radio SP, vel post excessum corporis de vertice descripta fuit, vel ante appulsum ejus ad verticem describenda est. Innotescit area illa ex tempore ipsi proportionali. Bisecca AS in G, erigeq; perpendicularum GH æquale $3M$, & circulus centro H, intervallò HS descriptus secabit Parabolam in loco quaesito P. Nam demissa ad axem perpendiculari PO, est $HGq. + GSq. (=HSq. = GOq. + HG - POq.) = GOq. + HGq. - 2HG \times PO + POq.$ Et deletò utrinq; $HGq.$ fiet $GSq. = GOq. - 2HG \times PO + POq.$ seu $2H \times G \times PO (=GOq. + POq. - GSq. = AOq. - 2GAO + POq.) = AOq. + \frac{1}{2}POq.$ Pro $AOq.$ scribe $AO \times \frac{POq.}{4AS}$ & applicatis terminis omnibus ad $3PO$, ductisq; in $2AS$, fiet $\frac{1}{2}GH \times AS (= \frac{1}{2}AO \times PO + \frac{1}{2}AS \times PO = \frac{AO + 3AS}{6} \times PO = \frac{4AO - 3SO}{6} \times PO =$ area APO - SPO) = area APS. Sed GH erat $3M$, & inde $\frac{1}{2}HG$



$\frac{1}{2}HG \times AS$ est $4ASxM$.
M. Q. E. D.

Corol. 1. Hinc GH est
fit arcum AP ad tempus
cem A & perpendicularum

Corol. 2. Et circulo A
unte, velocitas puncti G
in vertice A, ut 3 ad 8; a
ad lineam rectam quam
cum velocitate quam habet

Corol. 3. Hinc etiam v
pus descripsit arcum que
medium ejus punctum eri
in H.

Nulla extat figura Ovalis cu
æquationes numero term
inveniri.

Intra Ovalem detur p
revolvatur perpetuo linea
tum mobile de polo, per
ut rectæ illius intra Ova
illud describet Spiralem g
finitam æquationem inven
æquationem distantia pun
lis est, adeoq; omnia Spir
veniri possunt: & propte
sectio cum spirali inveniri
Atqui recta omnis infinite
mero infinitis, & æquatio,
invenitur, exhibet earum